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10/518,548	07/11/2006	Tomohisa Takahashi	26419-4US90PCT	6822
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER WEDDELL, ALEXANDER MARION	
			ART UNIT	PAPER NUMBER
			1714	
			NOTIFICATION DATE	DELIVERY MODE
			10/28/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com

oblonpat@oblon.com

jgardner@oblon.com

### Office Action Summary

**Application No.**

10/518,548

**Applicant(s)**

TAKAHASHI, TOMOHIKA

**Examiner**

ALEXANDER WEDDLE

**Art Unit**

1714

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 August 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5 and 8-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5 and 8-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 10 August 2010 have been fully considered but they are not persuasive.
2. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Although Claim 1 was rejected in the Office Action of 14 May 2009 under 35 USC 103(a) over Applicant's admitted prior art ("AAPA") in view of Martellock, and not on Martellock alone.
3. In response to Applicant's argument with respect to whether the Martellock coating method would not allow the movement or sliding of the coating collar in the reverse direction (Remarks, page 7, first paragraph). First, it would have been obvious to a person of ordinary skill in the art at the time of invention to reverse the direction of the coating collar in order to coat the structure to a desired thickness or smoothness. Second, the arguments of counsel cannot take the place of evidence in the record. Objective evidence which must be factually supported by an appropriate affidavit or declaration to be of probative value includes evidence of unexpected results, commercial success, solution of a long-felt need, inoperability of the prior art, invention before the date of the reference, and allegations that the author(s) of the prior art derived the disclosed subject matter from the applicant.

4. Because Applicant has amended the Claim 1, now requiring "ring-shaped scraper having a ring-shaped center member," Examiner has added an additional rejection under 35 USC 103(a) over Sander (2002/0100994) in view of AAPA necessitated by the amendment to the Claims.

5. Because Applicant has amended the Claims, Examiner responds to arguments made by Applicant on 11 March 2010 with respect to the Sander reference. In response to applicant's argument that the references fail to show certain features of applicant's invention (Remarks, 11 March 2010, pp. 7-8), it is noted that the features upon which applicant relies (i.e., "a plate-shaped and ring-shaped scraper" and "the entire circumferential face") are not recited in the amended claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

6. To the extent that Applicant argued that the second moving of said scraper from the face of the pillar-shaped porous honeycomb member would "likely be difficult or impossible (Remarks, 11 March 2010, p. 8, top paragraph), the arguments of counsel cannot take the place of evidence in the record. Objective evidence which must be factually supported by an appropriate affidavit or declaration to be of probative value includes evidence of unexpected results, commercial success, solution of a long-felt need, inoperability of the prior art, invention before the date of the reference, and allegations that the author(s) of the prior art derived the disclosed subject matter from the applicant.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-2, 5, 10, and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art ("AAPA") in view of Martellock (US 4,018,953).

Regarding Claims 1 and 11, AAPA teaches a method of manufacturing a honeycomb body having a sealing material layer on a peripheral portion of a pillar porous honeycomb member, comprising the steps of preparing a pillar-shaped porous honeycomb member; applying a paste-like sealing material onto a circumferential face of the pillar-shaped porous honeycomb member; and scraping the pillar-shaped honeycomb member with a scraper (Specification, Background Art, p. 1, line 16 – p. 2, line 4). AAPA is silent as to fitting a ring-shaped scraper onto the pillar-shaped member. Martellock (US'953) teaches a method of coating the exterior of a cylindrical

substrate; the method is reasonably pertinent to the particular problem with which the applicant was concerned of uniformly coating the circumferential face of the pillar-shaped member. The method of US'953 comprises steps of fitting a collar ("ring-shaped scraper having a ring-shaped center member") to the cylinder, and moving (sliding) the collar down the outside of the cylindrical substrate while applying sufficient pressure on the circumferential surface of the substrate to scrape the substrate and/or the sealing material to form a thin coating of liquid on the outer surface (Abstract; col. 2, lines 40-68; col. 3, lines 1-18; Figs. 1, 3). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process of AAPA by substituting the plate-shaped scraper of AAPA with the ring-shaped scraper of US'953, because US'953 suggests that a ring-shaped scraper provides an extremely uniform coating (col. 4, lines 1-11).

The combination of references teaches moving the collar/ scraper down the full length of the cylinder to leave a thin coating of the liquid on the outer surface of the cylinder. The combination of references is silent as to moving the scraper in a second length direction, starting from the end face of the pillar-shaped member on the side opposite to the starting side of the first moving [position]. It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process of the combination of references to perform the second moving step; for instance, to spread the applied coating more evenly or to apply a second coating of sealing material at the end of a first stroke, as by turning the cylinder upside down and proceeding from the opposite direction.

Regarding Claim 2, AAPA suggests that a pillar-shaped body may have a cross-sectional shape perpendicular to the length direction which is other than a round shape (AAPA, Fig. 1, *prior art*).

Regarding Claim 5, AAPA is silent as to the plate-shaped, ring-shaped scraper. US'953 suggests a center member made from a material that is softer than the material of the pillar-shaped member (col. 3, lines 5-18; Fig. 3). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process taught by the combination of references by disposing a center member made from a material that is softer than the material of the honeycomb member inside the plate-shaped and ring-shaped scraper(s) in order to avoid scratching the material of the honeycomb structure while spreading the sealing material over the exterior of the structure.

Regarding Claim 10, the structural limitations of the ring-shaped structure is not given patentable weight in the method claim, because the structural recitation does not affect the method in a manipulative sense and amounts to mere claiming the use of a particular structure.

Regarding Claims 12-15, AAPA is silent as to a particular material for the scraper. US'953 teaches that the gasket portion, which contacts the surface to be coated, of the ring scraper may be made of synthetic rubber, such as polyethylene or TEFLON (Fig. 3; col. 3, lines 5-33). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process of the combination of references with a ring-shaped center member comprising synthetic rubber in order to

scrape the material with sufficient resilience to avoid damage to the surface of the honeycomb member.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art ("AAPA") in view of Martellock (US 4,018,953) as applied to claim 1 above, and further in view of Horikawa et al. (EP 449556).

Regarding Claim 8, AAPA teaches that the sealing material is highly viscous (Specification, p. 4, lines 5-7). The combination of references is silent as to a precise range of viscosity. EP'556 teaches a sealing material with a viscosity in the range of 10 to 20 Pa-s (100 to 200 poises) (p. 4, lines 1-10). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process taught by the combination of references by spreading a sealing material with a viscosity which overlaps the claimed range over the exterior of the structure, because EP'556 teaches that a material with a viscosity overlapping this range will spread uniformly over a ceramic honeycomb structure.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art ("AAPA") in view of Martellock (US 4,018,953) as applied to claim 1 above, and further in view of MacNeill (US 5,385,873).

Regarding Claim 9, AAPA in view of US'953 is silent as to inorganic filler and inorganic binder. MacNeill (US'873) teaches a sealing material comprising an inorganic filler and an inorganic binder (col. 2, lines 2-29). US'873 discloses that the inorganic binder is a high-aspect ratio (high length to diameter) vermiculite with an aspect ratio of about 10 or more. US'873 teaches that the ceramic fibers are long with small



diameters, (*i.e.*, high aspect ratio). US'873 is silent as to the aspect ratio of the inorganic filler. It would have been obvious to a person of ordinary skill in the art at the time of invention to practice the method of the combination of references with the recited composition with ceramic fibers with an aspect ratio within the range of that of the vermiculite with a reasonable expectation of success, because US'873 suggests that the coating is suitable as a high temperature resistant coating material..

12. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art ("AAPA") in view of Martellock (US 4,018,953) as applied to Claim 1 above, and further in view of McChesney et al. (US 4,454,833).

AAPA in view of US'953 is silent as to urethane rubber. US'833 indicates that scraper blades may be formed from various materials including flexible materials, such as urethane, in order to provide enough contact pressure to scrape material on the surface of a cylinder without excessive wear (col. 4, lines 22-30). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process of the combination of references by substituting urethane for the TEFLON or polyethylene on the ring-shaped center member, because scrapers comprising a urethane rubber contact surface are conventional in the art and because US'833 suggests that the use of a scraper with a urethane rubber contact surface can provide sufficient pressure for coating while avoiding excessive wear.

13. Claims 1, 2, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sander (US 2002/0100994) in view of Applicant's admitted prior art ("AAPA").

Regarding Claims 1 and 11, Sander (US'994) teaches a method for manufacturing ceramic monoliths, such as catalytic converters for catalytically treating the exhaust gas of internal combustion engines (Abstract; par. 0002), Comprising the steps of applying a sealing material to the outside surface of the ceramic monolith (pars. 0015, 0018) and scraping the exterior surface of the ceramic monolith with a calibrating ring – of apparently sufficient thickness to apply sufficient pressure on the circumferential surface of the honeycomb member – which moves relative to the exterior surface of the ceramic monolith to both strip away excess seal material with sufficient pressure on the outer surface and to provide a smooth seal surface coating (par. 0019). A person of ordinary skill in the art at the time of invention would have recognized that the ring would spread (*i.e.*, “expand”) the sealing material over the entire exterior face of the ceramic monolith as it moved relative to the surface in order to smooth the surface.

US'994 is silent as to a step of preparing a pillar-shaped porous honeycomb member. AAPA teaches that a scraper was known in the prior art to form a sealing material layer from an uncured sealing material on a honeycomb member (Figs. 5(a) - (e); par. 0010). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process of US'994 by modifying the scraper to achieve the benefits of the prior art scraper while simultaneously benefiting from the ring-shape scraper of US'994 to achieve a uniform coating over the surface of a cylindrical surface.

US'994 teaches moving a ring scraper to come down over a coated structure or a doctor blade along the exterior of the monolith and teaches a rotating table and rotating

the coated part adjacent to a stripping or doctor blade (par. 0019). US'994 in view of AAPA is silent as to a step of moving the plate-shaped and ring-shaped scraper(s) to reciprocate the scraper(s) in the length direction. It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process of the combination of references by moving scraper(s) back and forth (i.e. reciprocating) in the length direction in order to uniformly spread the outer periphery of the member to provide an adequate ceramic honeycomb structure.

Regarding Claim 2, US'994 teaches that a catalyst structure typically has a cylindrical side surface, but does not particularly limit the geometry. AAPA suggests that a pillar-shaped body may have a cross-sectional shape perpendicular to the length direction which is other than a round shape (AAPA, Fig. 1, *prior art*).

Regarding Claim 10, the structural limitations of the ring-shaped structure is not given patentable weight in the method claim, because the structural recitation does not affect the method in a manipulative sense and amounts to mere claiming the use of a particular structure.

14. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sander (US 2002/0100994) in view of Applicant's admitted prior art ("AAPA") as applied to Claim 1 above, and further in view of Muroi et al. (JP2004290766A, citing US 2007/0037703 as English Translation for convenience).

Regarding Claim 5, the combination of references is silent as to the material from which the contacting portion of the ring (i.e. the center member) is made. Muroi et al. (JP'766) teach a step of scraping the end surface of a honeycomb carrier in the

manufacture of a honeycomb catalyst with a scraper, which employs rubber or soft resin, to scrape a sealing material with a viscosity in the range of 5 to 50 Pa-s (50 to 500 poises), more preferably a viscosity in the range of 10-20 Pa-s (pars. 0035 – 0042). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process taught by the combination of references by disposing a center member made from a material that is softer than the material of the honeycomb member inside the plate-shaped and ring-shaped scraper(s) in order to avoid scratching the material of the honeycomb structure while spreading the sealing material over the exterior of the structure.

15. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sander (US 2002/0100994) in view of Applicant's admitted prior art ("AAPA") as applied to Claim 1 above, and further in view of Horikawa et al. (EP 449556).

Regarding Claim 8, US'994 in view of AAPA is silent as to the viscosity of the sealing material. EP'556 teaches a sealing material with a viscosity in the range of 10 to 20 Pa-s (100 to 200 poises) (p. 4, lines 1-10). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process taught by the combination of references by spreading the sealing material with a viscosity which overlaps the claimed range over the exterior of the structure, because EP'556 teaches that a material with a viscosity within this range will spread uniformly over a ceramic honeycomb structure.

16. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sander (US 2002/0100994) in view of Applicant's admitted prior art ("AAPA") as applied to Claim 1 above, and further in view of MacNeill (US 5,385,873).

Regarding Claim 9, while not particularly restrictive, US'994 teaches that a sealing paste may be made from a mixture of high aspect ratio vermiculate blended with ceramic fibers to produce a relatively smooth blend of vermiculite and fibers (pars. 0005-0006). The combination of references is silent as to the aspect of inorganic filler to inorganic binder. MacNeill (US'873) teaches a sealing material comprising an inorganic filler and an inorganic binder (col. 2, lines 2-29). US'873 discloses that the inorganic binder is a high-aspect ratio (high length to diameter) vermiculite with an aspect ratio of about 10 or more. US'873 teaches that the ceramic fibers are long with small diameters, (*i.e.*, high aspect ratio). US'873 is silent as to the aspect ratio of the inorganic filler. It would have been obvious to a person of ordinary skill in the art at the time of invention to practice the method of the combination of references with the recited composition with ceramic fibers with an aspect ratio within the range of that of the vermiculite with a reasonable expectation of success, because US'873 suggests that the coating is suitable as a high temperature resistant coating material.

17. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sander (US 2002/0100994) in view of Applicant's admitted prior art ("AAPA") as applied to Claim 1 above, and further in view of Martellock (US 4,018,953).

Regarding Claims 12-15, US'994 in view of AAPA is silent as to any particular material of the ring-shaped scraper. US'953 teaches that the contact surface of a

scraper, which contacts the surface to be coated, may be made of synthetic rubber, such as polyethylene or TEFLON (Fig. 3; col. 3, lines 5-33). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process of the combination of references with a ring-shaped center member comprising synthetic rubber in order to scrape the material with sufficient resilience to resist wear to the surface of the honeycomb member and to the scraper.

18. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art ("AAPA") in view of Martellock (US 4,018,953) as applied to Claim 1 above, and further in view of McChesney et al. (US 4,454,833).

AAPA in view of US'953 is silent as to urethane rubber. US'833 indicates that scraper blades may be formed from various materials including flexible materials, such as urethane, in order to provide enough contact pressure to scrape material on the surface of a cylinder without excessive wear (col. 4, lines 22-30). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process of the combination of references by providing a urethane on the contact surface of the ring-shaped center member, because scrapers comprising a urethane rubber contact surface are conventional in the art and because US'833 suggests that the use of a scraper with a urethane rubber contact surface can provide sufficient pressure for coating while avoiding excessive wear.

### ***Conclusion***

19. No Claim is allowed.

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER WEDDLE whose telephone number is (571) 270-5346. The examiner can normally be reached on Monday-Thursday, 7:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Kornakov can be reached on (571)272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. W./  
Examiner, Art Unit 1714  
/Michael Kornakov/  
Supervisory Patent Examiner, Art Unit 1714